

RECLAMATION

Managing Water in the West

Draft Environmental Assessment

Tulare Irrigation District In-Basin Exchange with Consolidated Peoples Ditch Company and Farmers Ditch Company Central Valley Project, CA

EA-07-27



U.S. Department of the Interior
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Mid Pacific Region
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List of Acronyms, Abbreviations and Definition of Terms

AF	acre-feet
AF/y	acre-feet per year
City	City of Tulare
DFG	California Department of Fish and Game
Calendar Year	Period January 1 through December 31, both dates inclusive.
Class 1 water	(Friant Division Only) Firm supply of water for certain contractors who have no other surface water supply. That supply of water stored in or flowing through Millerton Lake which, will be available for delivery from Millerton Lake and the F-K and Madera Canals. It is a dependable water supply during each year.
Class 2 water	(Friant Division Only) Undependable water. Supplied when available. That supply of water which can be made available subject to the contingencies for delivery from Millerton Lake and the F-K and Madera Canals in addition to the supply of Class 1 Water. Because of its uncertainty as to availability and time of occurrence, such water will be undependable characterized and will be furnished only if, as, and when it can be made available as determined by the Contracting Officer.
CNDDDB	California Natural Diversity Data Base
Conjunctive Use	Planned use of groundwater in conjunction with surface water in overall management to optimize water resources.
Contract Year	Period from and including March 1 of each Calendar Year through the last day of February of the following Calendar Year.
CPDC	Consolidated Peoples Ditch Company
CVP	Central Valley Project
DOI	Department of Interior
EA	Environmental Assessment
ESA	Endangered Species Act
Exchange	Exchange of water among contractors
FDC	Farmers Ditch Company

FKC	Friant-Kern Canal
FWCA	Fish and Wildlife Coordination Act
ITAs	Indian Trust Assets
Reclamation	Bureau of Reclamation
RRA	Reclamation Reform Act of 1982
Service	U.S. Fish and Wildlife Service
TID	Tulare Irrigation District
Water Year	Synonymous with definition for Contract Year.

Section 1 Purpose and Need for Action

1.1 Background

Tulare Irrigation District

The Tulare Irrigation District (TID) was organized September 21, 1889. The original proposal for the formation of an irrigation district covering 219,000 acres, extending from the Sierra Nevada foothills to Tulare Lake, was eventually reduced to 32,500 acres. TID continued in this status until January of 1948 when the so-called “Kaweah Lands” (approximately 11,000 acres) were annexed. TID now encompasses about 65,000 acres of irrigated lands.

A Bureau of Reclamation (Reclamation) contract was signed in 1950 providing an annual supply of 30,000 acre-feet per year (AF/y) of Class 1 water, and up to 141,000 AF/y of Class 2 water from the Friant-Kern Canal (FKC). At times, when TID has had extra water, they have been able to store part of it with Peoples Ditch Company and/or Farmers Ditch Company for use in season.

Consolidated Peoples Ditch Company

Peoples Ditch Company (CPDC) is located in Visalia, CA and irrigates 25,000 acres. CPDC was formed in 1875. CPDC’s canal, the People’s Ditch, is approximately 20 feet in width with the head being taken from the lower Kaweah, a few miles west of Lemon Cove. While the first work of this system did not begin until 1875, many of the water rights secured dated as far back as the 1850s, and were obtained by a consolidation of the interests of the owners with the new organization. (Menefee and Dodge 1913). The predominant crops are corn, walnuts, and cotton; and all water deliveries are for agriculture.

Farmers Ditch Company

Farmers Ditch Company (FDC) is located in Farmersville, CA and irrigates 18,500 acres. FDC was formed in 1875. FDC is served by the Deep Creek diversion on the lower Kaweah River about 4 miles south of Woodlake, and the Deep Creek channel is approximately 30 feet in width. As with CPDC, the original water rights were secured in the late 1800’s via consolidation of owner interests, and the predominant crops are corn, walnuts, and cotton. All water deliveries are for agriculture.

Action Areas found on 7 ½ minute U.S. Geological Survey quadrangles (FKC to TID, Tulare and Fresno Counties, CA)

Quadrangle Name	Township/Range	Sections
Exeter	T18SR26E	21, 21, 23, 28
Rocky Hill	T18SR26E	13, 14, 23, 24
Woodlake	T18SR26E	1, 2, 11, 12
Ivanhoe	T17SR26E	4, 9, 16, 21, 27, 34
	T16SR26E	32 and 33
Stokes Mountain	T16SR26E	30
	T16SR25E	22, 25-27, 11-15, 3
Orange Cove South	T15SR25E	33, 29, 18, 19
Orange Cove North	T15SR24E	1, 12, 13, 2
	T14SR24E	34, 35, 27, 28, 21
Wahtoke	T14S24E	17, 18, 20
	T14S23E	11, 13, 14, 2
Piedra	T13SR23E	35, 26-29, 32, 20, 17
Round Mountain	T13S23E	7, 18
	T13S22E	12, 1, 2
	T12S22E	34, 35, 29, 28, 20
Academy	T12S22E	18-20, 7
Clovis	T12S21E	10-13, 3-4
	T11S21E	33, 34, 28, 29, 20, 21, 17, 16, 4, 5
Millerton Lake West	T11S21E	4, 5
	T10SR21E	32-34

1.2 Purpose and Need

The Bureau of Reclamation (Reclamation) proposes to approve a long-term exchange of up to 40,000 AF/y of TID Central Valley Project (CVP) water for an equal amount of non-CVP Kaweah River water from CPDC and/or FDC through February 2026.

The proposed exchange is for the purpose of irrigation deliveries, conjunctive use operations, and improved water management within the Kaweah Basin which may include:

- Optimization of power production at the hydropower plant at Terminus Dam;
 - Reduction of conveyance losses within the Kaweah River system;
 - Improved flexibility in utilization of Kaweah River entitlement and available storage;
- and

- Improved flexibility in utilization of Friant Class 1 and Class 2 supplies, when available.

TID seeks to deliver all of its accrued Kaweah River entitlement during its summer irrigation because Lake Kaweah has minimal conservation storage space in the months of November through March.

A long-term exchange of up to 40,000 AF/y of TID CVP water for an equal amount of non-CVP Kaweah River water from CPDC and/or FDC is necessary to maximize water management opportunities and flexibility, while minimizing Reclamation's administrative time and costs associated with annual short-term transactions. Exchanges could be done more frequently by utilization of water supplies from dual sources resulting in less spillage. This could occur when there have historically been times when additional CVP water, over and above TID's needs, could have been delivered to CPDC and/or FDC, thus enabling these companies to keep their Kaweah entitlements in Lake Kaweah for diversion later in the irrigation season. This would help to reduce conveyance losses and possibly result in increased deliveries of Class 2 supplies into the Kaweah basin. Depending on what other Kaweah units are conveying water in the Kaweah River channel, the delivery of additional CVP water can alter the timing and delivery of CPDC/FDC Kaweah water in such a way as to minimize conveyance channel losses due to seepage.

1.3 Potential Issues

- Water Resources
- Land Use
- Biological Resources
- Cultural Resources
- Indian Trust Assets
- Socioeconomic Resources
- Environmental Justice

Section 2 Alternatives Including the Proposed Action

2.1 Alternative A: No Action

Reclamation would not approve the long-term exchange of up to 40,000 acre-feet (AF) of CVP water per year. TID would continue to operate in their current fashion. They could miss out on opportunities to do these combined CVP/Kaweah.

2.2 Alternative B: Proposed Action

Reclamation proposes to approve on a long-term basis, annual exchanges of up to 40,000 AF of CVP water per year between Water Years 2008 through February 2026 between TID, CPDC, and FDC. Existing diversion facilities would be used to divert this non-CVP water from the Kaweah River system, and no change in purpose of use or permitted place of use would be contemplated to effectuate this exchange. Water delivery would be from the Friant Division at Millerton Lake, via conveyance in the Friant-Kern Canal and existing diversions from turnouts identified for TID long-term water service contract at milepost 68.14 and mileposts 69.48, and 71.29 (Figure 1). However, pursuant to Article 5 of the long-term water service contract, TID would not be limited to these points of delivery. Non-CVP water being exchanged originates from Lake Kaweah and would be re-diverted from TID storage.

The proposed exchange would be between TID and private stock ditch companies: CPDC and FDC. CVP water would be delivered from the Friant Division to CPDC and/or FDC. TID, CPDC and FDC would jointly determine the exchange balance each year depending on operational circumstances at the time. This water would be diverted via the Kaweah River turnout (MP 71.29) on the Friant-Kern Canal to the Lower Kaweah River, thence to the Peoples Ditch and Deep Creek turnouts on the river into CPDC's and FDC's canal systems, respectively. In exchange, CPDC and FDC would assign an equivalent amount of Kaweah River water owned thereby in storage in Lake Kaweah to TID. Upon release from Lake Kaweah, TID would divert such Kaweah River water from its upstream diversion points for ultimate delivery into TID's service-area canals. Like CPDC and FDC, TID has rights to water in Lake Kaweah. Each annual exchange transaction would be completed within one to three years from date the CVP water is diverted to the Kaweah River. Reclamation and TID would develop and implement effective monitoring and tracking mechanisms. The term of the exchange is proposed to be commensurate with TID's long-term contract for CVP water through February 2026. The final exchange transaction must be balanced on the CVP side by

end of Contract Year 2025. The exchange transaction envisions final CVP water being delivered to CPDC and/or FDC during 2025 Contract Year only through a period whereby assurance exist that delivery of all return non-CVP water must be provided to TID no later than February 29, 2026.

As far as deliveries of CVP water are concerned, both CPDC and FDC have turnouts along the Kaweah River, stemming from Terminus Dam on Lake Kaweah, which feed their respective canal systems. These turnouts along the river are downstream of the intersection of the Friant-Kern Canal with the river, and there is a delivery structure from that canal to the river to deliver CVP water being exchanged into the river (Figure 2-1). This exchanged water loses its CVP characteristics.

CPDC and FDC each accrues Kaweah water at different rates and has different amounts of storage space available in Lake Kaweah depending on current delivery patterns and available supplies.

The diversionary rights of CPDC and FDC in the waters of the Kaweah River are pre-1914 water rights.

The proposed exchange of up to 40,000 AF/y would be a balanced, bucket-for-bucket use. The exchange amount each year would be determined based on quantities of Kaweah River entitlement and Lake Kaweah storage, as well as patterns of CVP supplies, available across various hydrologic years. The bucket-for-bucket use would be completed within the one to three-year time period.

TID would negotiate a long-term agreement with CPDC and FDC companies not to exceed 40,000 AF per year. The long-term agreement would be reviewed annually and, based on the hydrologic conditions, the amount could be less. At that time TID, CPDC and FDC would determine optimal exchange operations.

The Proposed Action would be subject to the following conditions:

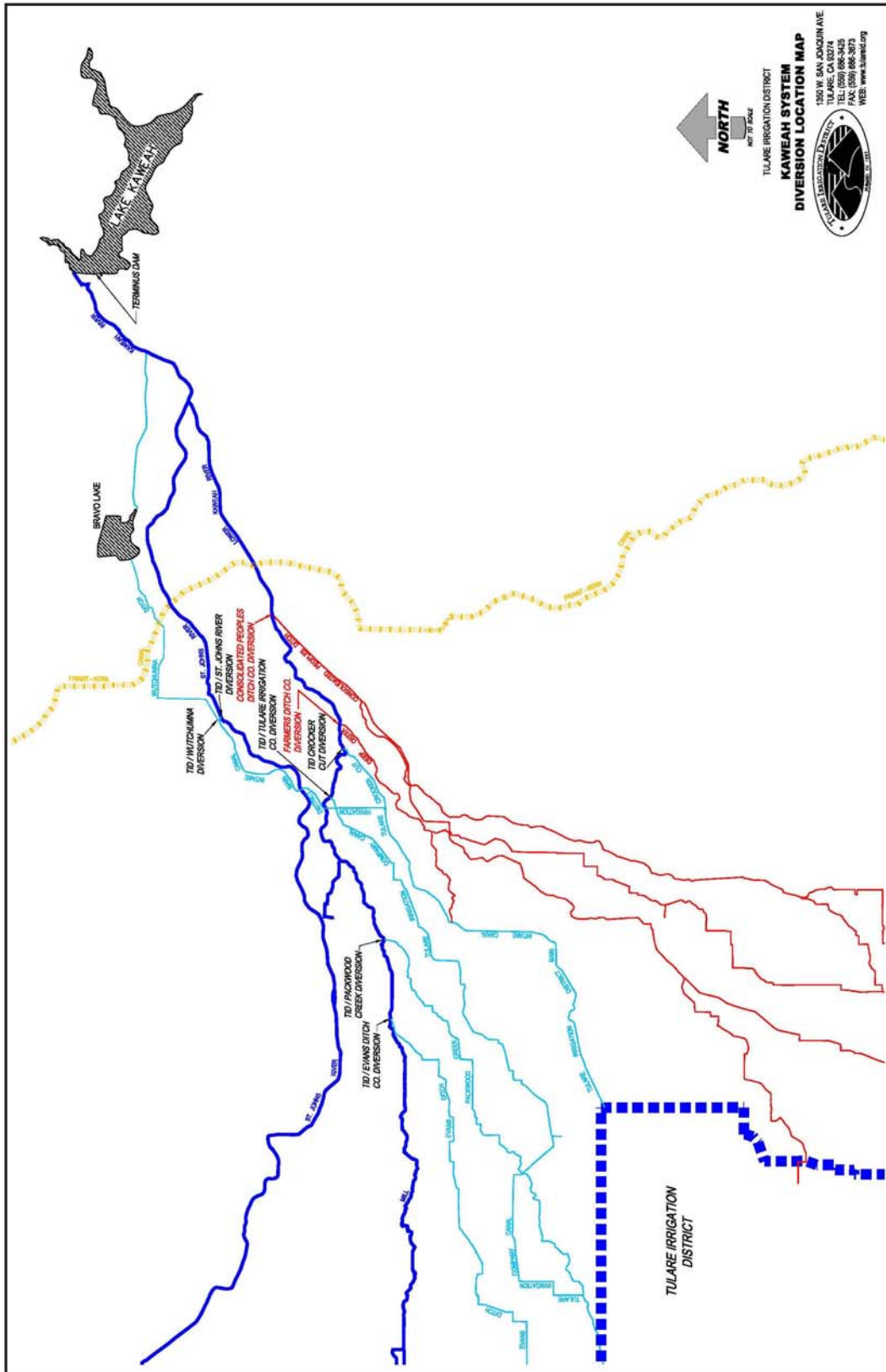
- a. The water would only be used for beneficial purposes within the Friant Division place of use and in accordance with applicable Federal Reclamation laws and guidelines, and state law.
- b. The water would not be used to place untitled or new lands into production, nor to convert undeveloped land to other uses.
- c. The Proposed Action would not affect CVP operations.
- d. The movement of the water would not require the construction of any new water diversion or conveyance facilities.

- e. This water would not be used for conversion of lands without subsequent environmental review and approvals from the Contracting Officer.
- f. Contracting Officer's will periodically review annual exchanges for compliance before approving or acknowledging subsequent actions.
- g. After Contracting Officer's determination of TID's consistent compliance over a consecutive period of time, the Contracting Officer may exercise discretion to conduct reviews on a less or more frequent basis.
- h. TID's non-compliance will trigger remedial action to be determined by the Contracting Officer.
- i. Assignments to TID of stored water in Lake Kaweah belonging to CPDC and FDC would be in accordance with the bylaws and associated rules and regulations of the Kaweah and St. Johns Rivers Association.

Due to varying hydrological conditions and other circumstances, imbalanced exchanges could occur operationally. For the purposes of this EA, however, only for imbalanced exchanges, TID's entire supply of up to 40,000 af/y would be delivered to CPDC and/or FDC with no less than 90 percent being returned to TID. Reclamation must remain whole. Therefore, operational imbalances occurring must not occur on the federal side of the transaction. Reclamation provides a built-in contingency simply because of previous experience with minor operational fluctuation in an existing TID exchange program. Reclamation's approval, however, does not generally allot for any more than a 10 percent imbalance on a sporadic or as needed basis. Proposed exchange arrangements exceeding 10 percent imbalance contingency are not within the scope of this proposed action. Subsequent approvals and environmental reviews would be required accordingly.

It should be noted this environmental analysis does not result in a blanket approval. Consistent with established criteria, each proposal would be reviewed prior to TID implementing an action. Annual exchange transactions are envisioned to balance on the federal side within one to three years after the first block of CVP water is delivered. The Contracting Officer and TID would work together collaboratively in ensuring adherence to an appropriate monitoring and tracking methodology to be established.

Figure 2-1 TID Points of Delivery



Section 3 Affected Environment and Environmental Consequences

3.1 Water Resources

3.1.1 Affected Environment

The Kaweah River drains an area of 561 square miles of the Sierra Nevada Mountains. Below the foothills, the Kaweah divides into several distributaries that cross the river's alluvial fan and terminate in Tulare Lake. The average annual runoff is nearly 430,000 AF. Terminus Dam on the Kaweah River was completed in 1962 by the Army Corps of Engineers and created Lake Kaweah with a capacity of 150,000 AF.

Groundwater in Tulare County occurs in an unconfined state throughout, and in a confined state beneath its western portion. Extensive alluvial fans associated with the Kings, Kaweah, and Tule

Rivers provide highly permeable areas in which groundwater in the unconfined aquifer system is readily replenished. Interfan areas between the streams contain less permeable surface soils and subsurface deposits, impeding groundwater recharge and causing well yields to be relatively low. The mineral quality of groundwater in Tulare County is generally satisfactory for all uses.

In an average year, about 30 percent of California's urban and agricultural water is provided by groundwater extraction. In drought years when surface supplies are reduced, groundwater supports an even larger percentage of use. The amount of water stored in California's aquifers is far greater than that stored in the state's surface water reservoirs, although only a portion of California's groundwater resources can be economically and practically extracted for use.

The Department of Water Resources has estimated the groundwater overdraft for the Tulare Lake Basin at 820,000 AF/y the greatest overdraft projected in the state. (Tulare County 2007)

TID's water supply is derived from precipitation, pumping the underground reservoir, surface diversions of runoff from the pre-1914 water rights from the Kaweah River and its tributaries, and surface diversions from the FKC. The surface water supply for TID is obtained from the Kaweah River through water rights dating back to 1862, and from the FKC commencing in 1949. On average, TID obtains approximately 70,000 AF/y of water from the Kaweah River.

TID has a CVP contract with Reclamation for Class 1 and Class 2 water. Class 1 water is that

supply from behind Friant Dam that is made available through the FKC as a dependable water supply during most irrigation seasons. Class 2 water is that supply that becomes available in addition to the supply of Class 1 water and which, because of its uncertainty as to the availability and time of occurrence, is undependable in character and is furnished only, if and when, it is available. TID has a Contractual Entitlement of 30,000 AF/y of Class 1 and 141,000 AF/y of Class 2 CVP water.

TID has maintained an active conjunctive use program through their direct and "in-lieu" recharge programs. TID operates and maintains about 1,100 acres of percolation basins that are used in wetter years to recharge the underground water supplies. This program relies on maximum use of available surface water so that minimum extraction of groundwater occurs. This has been an effective and efficient means of recharging the area's groundwater supply and is the primary reason why TID contracted for CVP water. This conjunctive use of surface and groundwater has achieved a stabilized, sustainable use of surface and groundwater supplies accommodating the needs in dry, as well as, wet years. Between CVP and local surface water supplies TID has been able to maintain a relatively steady depth to groundwater in the area with the exception during drought conditions. After the dry periods 1959, 1960, and 1961, the average groundwater depth in TID was 99 feet; after 1976 and 1977, the average depth was 102 feet. While after a series of above normal runoff years, the average depth to groundwater in 1985 was 43 feet. However, long-term water level trends in TID, and the Kaweah basin in general, still indicate continued overdraft of groundwater resources despite TID's importation of CVP supplies over the years.

TID has three turnouts along the FKC. One diverts into TID's Main Intake Canal, one into the St. Johns, and the final turnout diverts into the Lower Kaweah River. These three channels and their downstream distributaries serve as the primary means to convey local and CVP water supplies into TID. TID's delivery system consists of about 300 miles of gravity-fed, earthen canals serving about 65,000 acres in western Tulare County. The primary crops grown are various nut crops, cotton, corn and grains that supply the local dairy industry.

3.1.2 Environmental Consequences

3.1.2.1 No Action

Reclamation would not approve the long-term exchange of up to 40,000 AF/y. TID, CPDC, and FDC could continue to do exchanges, as needed. There would be less efficient water management of the Kaweah Basin due to spillage in Kaweah Basin. Power production at the hydropower plant at Terminus Dam may not be optimized. There would be less reduction of conveyance losses within the Kaweah River system. There would be less improved flexibility in utilization of Kaweah River entitlement and available storage. There would be less opportunity to maximize the utilization of Friant Class 1 and 2 supplies when available.

3.1.2.2 Proposed Action

The proposed action would not affect contractor operations and would not change the existing diversion points or operations for other contractors. The exchange would be a bucket-for-bucket exchange and would not increase or decrease CVP allocations. It would not interfere with TID deliveries.

Potentially, the proposed action could allow TID to import more CVP water into the basin (e.g., Class 2 water). The proposed action may reduce pumping in that year and, in addition, raise groundwater levels over time which may further reduce the cost of pumping. Over time this may reduce groundwater shortages to the extent that groundwater may become financially infeasible to extract.

3.1.2.3 Cumulative Effects

Exchanges are a common practice throughout the CVP project area and provide the flexibility for improved water management decisions for farmers. Exchanges are temporary actions and do not result in any long-term increase or decreases of surface water in any specific region because an equal amount of water is returned. Exchanges are typically conducted for the purpose of delivering water in areas in need of water from areas that have excess water due to varying hydrological conditions. There are no cumulative effects to water resources.

3.2 Land Use

3.2.1 Affected Environment

TID comprises some 72,000 acres, of which 66,600 are irrigable acres. TID is located in western Tulare County on the east side of the San Joaquin Valley. Approximately 300 farming entities exist within TID growing mainly alfalfa, cotton, wheat and corn. TID was organized under the "Wright Act" in September 21, 1889. The principal city and site of the TID headquarters is Tulare, lying in the eastern part of TID at the intersection of the Southern Pacific and Santa Fe Railroads and on US Highway 99. TID does not supply municipal and industrial water. All water for use in the City of Tulare (City) is extracted from groundwater by City-owned wells. The wells extend into the groundwater basin underlying the City, TID and beyond. In 1987, the City pumped 10,000 AF of groundwater. (Reclamation 2002)

Tulare County exports millions of dollars of agricultural commodities annually. Leading exports include almonds, pistachios, citrus, and cotton. These commodities are exported to over 85 foreign countries. The Asian rim receives the majority of the exported commodities.

The terrain (on the valley floor, the primary agricultural zone) is generally flat or gently sloping. Elevations range from about 200 feet above sea level at the north county line to about 1,000 feet above sea level at the rim of the valley. Most of the valley floor ranges from

about 300-500 feet above sea level. (Reclamation 2002)

According to the Friant Division Long-Term Contract Renewal, Environmental Assessment, dated January 2001, TID has 1,403 acres of natural or native habitat which includes wetlands and riparian habitats. (Reclamation 2002)

3.2.2 Environmental Consequences

3.2.2.1 No Action

Under the no action alternative Reclamation would approve the exchange. The no action alternative would not result in any land use changes.

3.2.2.2 Proposed Action

The proposed action would not result in any land use changes. The exchange would not result in development of homes or municipal or industrial uses. The proposed action is for exchange of up to 40,000 AF/y TID CVP water in return for equal amount of non-CVP Kaweah River water from CPDC and/or FDC. The exchange water would be conveyed in existing facilities and does not require any land disturbances. The exchange water would be delivered to established agricultural lands.

3.2.2.3 Cumulative Effects

Exchanges are a common method for water management through the CVP project area. Exchanges are temporary actions and landowners do not rely on exchanges to make land management changes or long-term decisions for land uses. There would be no land management changes for land uses.

3.3 Biological Resources

3.3.1 Affected Environment

Table 1 shows the federally listed, proposed and candidate species potentially occurring in Fresno and Tulare Counties and was obtained on July 27, 2007, by accessing the U.S. Fish and Wildlife Database (List 070731122323). The list is for 7½ minute U.S. Geological Survey quadrangles in TID (Waukena, Tipton, Corcoran, Remnoy, Tulare, Paige, Taylor Weir, Goshen, and Visalia) and those that include the FKC (Exeter, Cairns Corner, Woodlake, Ivanhoe, Rocky Hill, Stokes Mtn., Orange Cove North, Orange Cove South, Piedra, Academy, Round Mountain, Millerton Lake West, and Millerton Lake East) (USFWS 2007).

TID is fully developed in agricultural or urban habitats, with little to no “natural lands” remaining. Agricultural lands can provide habitat for a number of species, including mammals (e.g., voles and gophers), birds (e.g., hawks, sparrows, and blackbirds), and

invertebrates (e.g., bees, grasshoppers, and spiders). The value of agricultural lands to biological resources will vary by species. A San Joaquin kit fox, for example, will likely make limited, if any, use of agricultural lands for travel and foraging, while a Swainson's hawk will use those same lands as a significant part of a foraging area.

Group	Species	Common Name	Status
Invertebrates	<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	E
	<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	T
		Critical habitat, vernal pool fairy shrimp	X
	<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	T
	<i>Lepidurus packardii</i>	vernal pool tadpole shrimp	E
		Critical habitat, vernal pool tadpole shrimp	X
Fish	<i>Hypomesus transpacificus</i>	delta smelt	T
	<i>Oncorhynchus mykiss</i>	Central Valley steelhead	T, NMFS
Amphibians		California tiger salamander, central population	T
	<i>Ambystoma californiense</i>	Critical habitat, CA tiger salamander, central population	X
	<i>Rana aurora draytonii</i>	California red-legged frog	T
Reptiles	<i>Gambelia (=Crotaphytus) sila</i>	blunt-nosed leopard lizard	E
	<i>Thamnophis gigas</i>	giant garter snake	T
Birds	<i>Gymnogyps californianus</i>	California condor	E
Mammals	<i>Dipodomys nitratooides exilis</i>	Fresno kangaroo rat	E
	<i>Dipodomys nitratooides nitratooides</i>	Tipton kangaroo rat	E
	<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	E
Plants	<i>Castilleja campestris ssp. succulenta</i>	succulent (=fleshy) owl's-clover	T
		Critical habitat, succulent (=fleshy) owl's-clover	X
	<i>Chamaesyce hooveri</i>	Hoover's spurge	T
		Critical habitat, Hoover's spurge	X
	<i>Orcuttia inaequalis</i>	San Joaquin Valley Orcutt grass	T
		Critical habitat, San Joaquin Valley Orcutt grass	X
	<i>Pseudobahia bahiifolia</i>	Hartweg's golden sunburst	E
	<i>Pseudobahia peirsonii</i>	San Joaquin adobe sunburst	T
	<i>Sidalcea keckii</i>	Keck's checker-mallow (=checkerbloom)	E
		Critical habitat, Keck's checker-mallow	X

E = Endangered T = Threatened C = Candidate X = Critical Habitat Designated
 NMFS = Species under the Jurisdiction of the National Oceanic and Atmospheric Administration

Table 1 U.S. Fish and Wildlife Database Species List

The U.S. Fish and Wildlife species list was supplemented with species identified from the California Department of Fish and Game California Natural Diversity Data Base (CNDDB) (see Table 2):

Group	Species	Common Name	Status
Plants			Fed - E, State - E
	<i>Caulanthus californicus</i>	California jewel-flower	
Birds			State - T, Fed-none
	<i>Buteo Swainsoni</i>	Swainson's hawk	

Table 2 California Natural Diversity Data Base Search Results

A record for the California jewel-flower exists in CNDDDB; however, this was a type locality based on collection of A.E. Bush from around 1880. A search for it was completed in 1986 but the species was not found. The species is extirpated and the general area no longer supports habitat for the species due to intensive agriculture and urban growth.

3.3.2 Environmental Consequences

3.3.2.1 No Action

Reclamation would not approve the exchange. There would be no change to the environmental baseline, and so there would be no change to biological resources, including listed species.

3.3.2.2 Proposed Action

There would be no impacts associated with approval of the exchange of up to 40,000 AF/y of water, as the water supplies would not change, the water deliveries would not result in more water or less water being delivered to any given area, and there would be no new facilities constructed to deliver the water. Land use changes would not occur as a result of this action, as there is no change in the amount of water that would be available to support any such land use alterations. For the same reasons, there would be no effect to species or critical habitats listed under the federal Endangered Species Act.

3.3.2.3 Cumulative Effects

No new construction or ground disturbing activities would occur. Land fallowing could occur as a result of hydrological or agricultural market fluctuations. Lands that have been fallowed for three consecutive years must be surveyed for biological resources prior to disking. These actions would not lead to long-term changes in foraging or shelter opportunities for wildlife. No additional water supplies would be diverted. Reclamation allocates water each year based on hydrological conditions. It is anticipated the exchange would expand the ability to improve water management in the project area. The proposed action would not result in major cumulative impacts to biological resources.

3.4 Cultural Resources

3.4.1 Affected Environment

The Section 106 process of the National Historic Preservation Act (NHPA) follows a series of steps that are designed to identify interested parties, determine the area of potential effects (APE), conduct cultural resource inventories, evaluate the significance of identified properties within the APE, and assess adverse effects on historic properties. In the event that historic properties occur within the APE, the Section 106 process is generally completed with the signing of an agreement document to resolve adverse effects. The NHPA requires that federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the effects of an undertaking on historic properties. The steps in the process are described in the 36 CFR Part 800 regulations that implement the NHPA.

Native American tribes are participants in the section 106 process. The regulations require federal agencies to consult with federally recognized tribes to determine if sites of religious or cultural significance are present within the APE for a specific action. Non-federally recognized tribes may also have concerns and Reclamation involves such tribes as interested members of the public pursuant to 36 CFR Part 800.2(d).

Both historic and Prehistoric Cultural Resources have been identified within the Southern Central Valley. Many of these resources are considered eligible for inclusion in the National Register of Historic Places. The proposed Action (Alternative B) is administrative in nature. The action uses existing facilities to transfer water and would not result in the irrigation or development of lands. The action constitutes no potential to affect historic properties pursuant to 36 CFR Part 800.3(a)(1).

3.4.2 Environmental Consequences

3.4.2.1 No Action

Reclamation would not approve the exchange.

3.4.2.2 Proposed Action

Exchange water would be conveyed in existing facilities to established agricultural lands that have already been tilled and disturbed. No excavation or construction would be required. Water exchanges through existing facilities that would not change land use constitute a no potential to affect.

3.4.2.3 Cumulative Effects

The proposed action and exchange would not impact any cultural resources as the exchanges would be through existing facilities that would not change land use.

3.5 Indian Trust Assets

3.5.1 Affected Environment

Indian Trust Assets (ITAs) are legal interests in property held in trust by the U.S. for federally-recognized Indian tribes or individual Indians. An Indian trust has three components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITAs can include land, minerals, federally-reserved hunting and fishing rights, federally-reserved water rights, and in-stream flows associated with trust land. Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes with trust land; the U.S. is the trustee. By definition, ITAs cannot be sold, leased, or otherwise encumbered without approval of the U.S. The characterization and application of the U.S. trust relationship have been defined by case law that interprets Congressional acts, executive orders, and historic treaty provisions.

Consistent with President William J. Clinton's 1994 memorandum, "Government-to-Government Relations with Native American Tribal Governments," Bureau of Reclamation (Reclamation) assesses the effect of its programs on tribal trust resources and federally-recognized tribal governments. Reclamation is tasked to actively engage federally-recognized tribal governments and consult with such tribes on government-to-government level (59 Federal Register 1994) when its actions affect ITAs.

The U.S. Department of the Interior (DOI) Departmental Manual Part 512.2 ascribes the responsibility for ensuring protection of ITAs to the heads of bureaus and offices (DOI 1995). Part 512, Chapter 2 of the Departmental Manual states that it is the policy of the Department of the Interior to recognize and fulfill its legal obligations to identify, protect, and conserve the trust resources of federally recognized Indian tribes and tribal members.

The nearest ITA to the proposed action is approximately 4 miles west and it is the Santa Rosa Rancheria.

3.5.2 Environmental Consequences

3.5.2.1 No Action

The No Action alternative would not affect ITAs as there are none.

3.5.2.2 Proposed Action

As in the No Action alternative, ITAs would not be affected.

3.5.2.3 Cumulative Effects

The Proposed Action would have no affect on past, present, or future ITAs.

3.6 Socioeconomic Resources

3.6.1 Affected Environment

Leading crops for Tulare County are milk, grapes, and oranges. The availability of CVP water for CVP contractors in the San Joaquin Valley provides additional stability for farmers to grow crops and to secure business loans from banks. In addition, CVP surface water greatly decreases the need for pumping groundwater and associated energy costs. (Reclamation 2005).

Tulare County has become the second-leading producer of agricultural commodities in the United States (Tulare County Farm Bureau 2007). In 2006, Tulare County produced 46 crops or products that each grossed over \$1 million per year, and the farms in Tulare County generated \$3,872,059,700 in gross production value. This represents a decrease of \$490,678,300 or 11 percent when compared to the 2005 gross production value of 4,362,738,300 (Tulare 2007).

3.6.2 Environmental Consequences

3.6.2.1 No Action

Reclamation would not approve the exchange. Socioeconomic trends would continue as described above.

3.6.2.2 Proposed Action

The proposed action is the exchange of water and would not result in increases or decreases to irrigated lands or jobs. Seasonal labor requirements would not change, and agriculture dependent businesses would not be affected. No adverse effects on public health and safety would occur. The proposed action would not result in changes to population, land use trends, water allocations, or other factors related to population growth and urbanization within the County of Tulare. Providing this affordable water would continue to maintain existing agricultural lands and could delay the conversion of agricultural lands to homes.

3.6.2.3 Cumulative Effects

The proposed action is a short-term transaction, and would not result in changes to agriculture dependent businesses. There would be no cumulative effects to the CVP operations or agricultural businesses.

3.7 Environmental Justice

3.7.1 Affected Environment

Environmental justice refers to the fair treatment of peoples of all races, income levels, and cultures with respect to the development, implementation, and enforcement of environmental

laws, regulations, and policies. Fair treatment implies that no person or group of people should shoulder a disproportionate share of negative impacts resulting from the execution of federal programs.

Executive Order 12898, dated February 11, 1994, establishes the achievement of environmental justice as a federal agency priority. The memorandum accompanying the order directs heads of departments and agencies to analyze the environmental effects of federal actions, including human health, economic, and social effects when required by the National Environmental Policy Act, and to address significant and adverse effects on minority and low-income communities.

According to the U.S. Census Bureau, the Tulare County population for 2000 was 368,021, 90.9 percent were white persons (2005), 1.9 percent were black persons (2005), 55.2 percent were persons of Hispanic or Latino origin (2005), and 38.2 percent were white persons not Hispanic (2005). Persons that were below poverty for 2003 were 21.5 percent. (U.S. Census 2000)

3.7.2 Environmental Consequences

3.7.2.1 No Action

Reclamation would not approve the exchange. There might be increase in costs of doing business due to groundwater pumping which might lead to farmers selling agricultural land converting the land to homes. This would then lead to less seasonal jobs that could be beneficial.

3.7.2.2 Proposed Action

Neither TID, CPDC nor FDC would be changing historic land and water management practices. The proposed action would be a variation on the timing, place, conjunctive use of surface and groundwater, and local energy costs of delivery of water practiced by water districts and landowners. The proposed action would not affect minority populations.

3.7.2.3 Cumulative Effects

The proposed action would not cause harm to minority or disadvantaged populations. The delivery of water at a reasonable price ensures seasonal jobs are available. Agricultural employment conditions in Tulare County suggest that any action that maintains seasonal jobs could be beneficial.

Section 4 Consultation and Coordination

4.1 Fish and Wildlife Coordination Act (16 USC . 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The Proposed Action does not involve construction projects. Therefore, the FWCA does not apply.

4.2 Endangered Species Act (16 USC . 1521 et seq.)

Section 7 of this Act requires Federal agencies to ensure that all federally associated activities within the United States do not jeopardize the continued existence of threatened or endangered species or adversely modify designated critical habitats that are important in conserving species. Action agencies must consult with the U.S. Fish and Wildlife Service (Service) and/or the National Marine Fisheries Service (NMFS) if a federal action will affect a listed species or critical habitat. Reclamation has determined under section 7 of the Act that the proposed action would have no effect on federally listed threatened or endangered species and would have no effect on critical habitats designated under the Act. No consultation with Service or NMFS is therefore required.

4.3 National Historic Preservation Act (15 USC 470 et seq.)

Federal agencies are required to consider the effects of their undertakings on historic resources, and to give the Advisory Council a reasonable opportunity to comment on those undertakings. The exchange of water would not adversely affect historic resources.

4.4 Migratory Bird Treaty Act (16 USC Sec. 703 et seq.)

The Migratory Bird Treaty Act implements various treaties and conventions between the U.S. and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior (Secretary) may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would have no effect on birds protected by the Migratory Bird Treaty Act.

4.5 Executive Order 11988 – Floodplain Management and Executive Order 11990-Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands. This action would not adversely affect floodplains or wetlands.

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